Ann R Coll Surg Engl 1996; 78: 15–19

A nurse-led preadmission clinic for elective ENT surgery: the first 8 months

C B Koay FRCS
Registrar

N J Marks MS FRCS
Consultant

Department of Otolaryngology, The Royal Berkshire Hospital, Reading

Key words: Preadmission clinic; Nurse-led clerking; ENT

A nurse-led preadmission clinic was set up in the Department of Otolaryngology of The Royal Berkshire Hospital, Reading, for patients undergoing elective ENT surgery. The progress of the clinic has been monitored during its first 8 months of service.

A two-part study was undertaken: (a) A prospective study of the process from the time an admission appointment was sent until completion of surgery and, (b) a retrospective review of the case notes to study the quality of clerking and note keeping and the pattern of requests for investigations made by the nurses.

In all, 514 patients were invited to attend the preadmission clinic before operation. Of these patients, 454 attended the clinic for preadmission clerking, 440 (96.9%) of whom underwent their operation without complication. All clerking notes were well kept, but a number of unnecessary investigations were requested.

It is concluded that a nurse-led preadmission clinic is effective in the management of elective ENT operating lists. It assists in improving the quality of an SHO's training by reducing time spent on service commitments, thereby increasing the potential training time. More guidance to nurses on the use of preoperative investigations is needed.

The use of a preadmission clinic to aid management of surgical waiting lists as recommended by The Royal College of Surgeons of England *(1)* is becoming an increasingly popular practice in recent years *(2,3)*. The practice has many advantages, and few, if any, disadvantages over the traditional method of elective admissions in which patients are admitted to the ward the day before surgery for clerking and investigations *(4)*. By clerking the patients 1–2 weeks before the planned admission date, a preadmission clinic allows early identification of those patients who are unable to attend and those who are unfit for surgery, giving plenty of time for operating lists to be reorganised and suitable replacements to be found, hence minimising wastage of theatre time. As patients are usually admitted to the ward on the day of surgery, a considerable number of beds are released and demand on nursing staff is reduced. A carefully timed preadmission clinic allows for optimum usage of the services of a phlebotomist and ECG technician, leaving medical and nursing staff more time to concentrate on patient care. As investigations are done well in advance of the admission date, out-of-hours demands on laboratory and radiographic services are reduced. Results of investigations may be collected in good time and early action may be taken against any abnormal results. This overcomes one of the most common pitfalls of the traditional admission system where the results of investigations are frequently unavailable at the time of surgery owing to lack of time for the tests to be processed *(5)*.

The running of a preadmission clinic is usually the responsibility of a preregistration or a senior house officer (HO/SHO) whose main duty is to clerk the patients and fill in investigation forms. A firm decision to operate on a patient would already have been made in the outpatient clinic by a surgeon, having taken into account the patient's general physical state and any medical condition. A poorly controlled medical condition which may increase the risk of a general anaesthetic should have been identified and cross-referred to an appropriate physician for further management before listing the patient for surgery. Advice from an anaesthetist should have been sought for patients with a more complex problem so that formal assessment can be arranged before admission. The role of an SHO in a preadmission clinic is therefore mainly confined to the repetitive tasks of asking a series of standard questions and organising investigations in accordance with a standard set of guidelines. The job is

Correspondence to: Mr C B Koay FRCS, ENT Department, Radcliffe Infirmary, Woodstock Road, Oxford OX2 6HE

limited in educational value, lacking in stimulation, and takes up a large proportion of an SHO's potential training time. Most of the duties could, in our opinion, be fulfilled by a nurse given sufficient guidance and support, thereby releasing the SHO to have more time for training in outpatient clinics and in theatre under the supervision of a consultant. This is particularly important if the educational objectives of doctors in training are to be met within a maximum average of 72-h week *(6)*.

The guidelines on day case surgery published by The Royal College of Surgeons of England *(7)* encourage active involvement of nursing staff on a day case surgery unit in the preoperative assessment of patients for day case surgery by using a proforma. The framework for a nurse-led clerking service is therefore already available in most day case surgery units. The great majority of patients on an ENT waiting list are children or healthy adults who are in many ways similar to patients suitable for day case surgery, but are often precluded from being operated on as a day case because of the nature of the surgery which may require overnight observation owing to a risk of reactionary haemorrhage and to the presence of dressings such as nasal packs and head bandages.

We felt that we could build on the success of our ENT day case surgery unit and take advantage of the experience of the nurses who had been running the unit by extending it to run a preadmission clinic for elective inpatient surgery. In February 1994, a nurse-led preadmission clinic for all elective adult ENT inpatient surgery and one for paediatric inpatient ENT surgery were established. The activities of the adult preadmission clinic in the first 8 months between February and September were closely monitored and recorded, and the results presented.

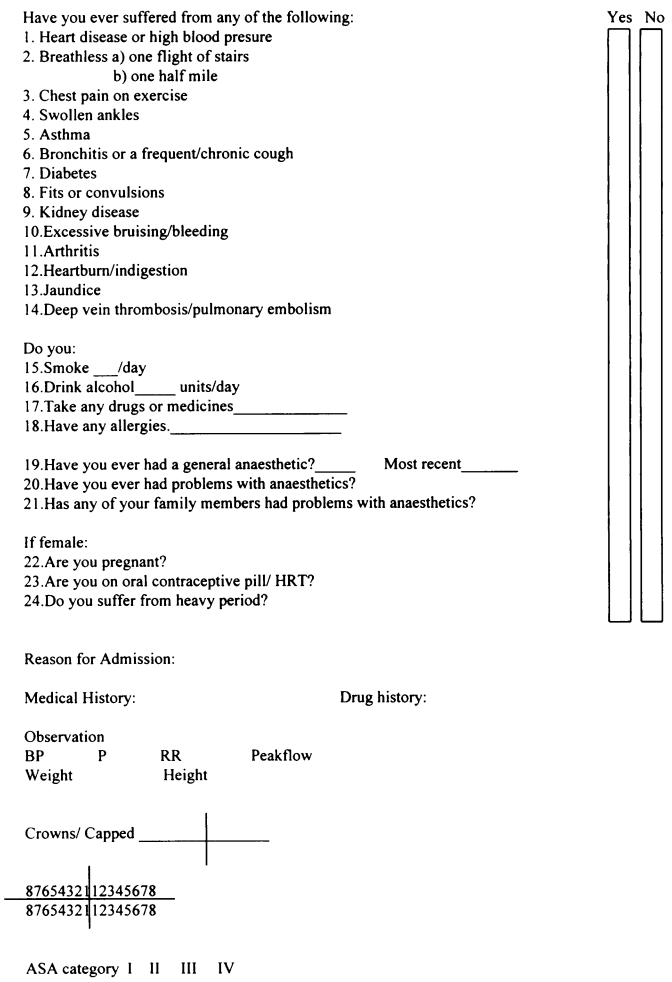

Figure 1. Standard proforma used for clerking.

Arrangement of a nurse-led preadmission clinic for adults

Admission letters are sent 3–4 weeks before the planned operation date and each patient is given two dates, one for the preadmission clinic, usually held 1–2 weeks before surgery, and one for the day of operation. A patient who fails to attend preadmission clinic for no apparent reason is contacted by telephone to confirm his intention. If he is not contactable or wishes to have his operation postponed or cancelled, a replacement for the space will be filled by a 'short notice' patient who could be seen in the next available preadmission clinic.

Two staff nurses and a ward sister, of Grade E, F and G, respectively, are responsible for running the clinic. All three nurses have had considerable experience in both ENT nursing and in the preoperative assessment of patients for day case surgery.

The preadmission clinic runs on Monday and Tuesday of each week. Each patient is given a half an hour slot, so that a total of 12–14 patients can be clerked each day. All the patients are seen in the calm of a quiet office setting to minimise any distraction. A standard admission booklet containing clerking information, admission health check information, anaesthetics record and perioperative nursing record is used for each patient, so that a comprehensive set of records relating to each admission can be kept in the notes for ease of future reference.

A standard proforma (pages 1 and 2 of the admission booklet) is used for the purpose of clerking (Fig. 1). Blood pressure, pulse, respiratory rate, peak flow, weight, height and dental status are recorded and any relevant investigations ordered. The physical status of each patient is assessed using the American Society of Anesthesiologists (ASA) Classification *(7)*. Those who are classified as ASA I or II need no further action and are asked to attend on the day of surgery. For those who are judged to be ASA III or IV, an ENT SHO and an anaesthetist (usually the one who will be anaesthetising the patient) are contacted for advice. Both the surgeon and the anaesthetist are also informed if a patient is an insulin-dependent diabetic so that the order of the list can be planned in his or her favour, and the preferred diabetic regimen of the anaesthetist can be instituted.

Any question from a patient relating to the operation and the hospital stay will be answered by the clerking nurse to the best of her ability. However, if this is beyond the scope of her knowledge or the patient's symptoms have changed or resolved since he was listed for the operation, an arrangement will be made for the patient to be reviewed in the outpatient clinic before admission.

On the day of admission, each patient is seen and consent obtained personally by the surgeon who will be performing the operation. An examination of the relevant ENT system is performed to confirm the pathology. This is of particular importance as some of the ENT conditions may resolve spontaneously, such as middle ear effusion and tympanic membrane perforation. An anaesthetist will assess the fitness of the patient for a general anaesthetic, including examination of the cardiovascular system, the respiratory system, the oral cavity and the neck. The anaesthetic assessment is aided by a comprehensive set of clerking notes from the nurse and relevant investigation results.

Methods

Activities relating to each patient were kept in a ward diary. Information collected include general information of the patient, type of surgery, date of the preadmission clinic appointment, non-attendance and the reason, any involvement of the surgeon or anaesthetist in the preadmission process, any cancellation or postponement of the operation and the reason, date and outcome of operation.

A retrospective review of the clerking notes was undertaken to define some of the characteristics of the patient population and to identify any areas that may need changing to improve the quality of the clerking. Anaesthetic records were scrutinised for any unforeseen anaesthetic problems. The pattern of requests for investigations by the nurses were also studied critically, taking into account patients' age, history and any associated medical conditions. Using the criteria set out by Billings *et al. (5)* (which is an amalgamation of criteria derived from literature), patients who were over- or underinvestigated were identified so that more strict guidelines on investigations could be drawn up.

A small number of patients were admitted more than once during the study period. For the purpose of analysis, each of these patients was considered as a separate patient with each new episode of admission.

Results

Over an 8 month period between February and September 1994, a total of 514 adult patients were invited to attend a nurse-led preadmission clinic before their operation (Fig. 2). Of these, 454 patients (88%) attended for clerking (23 of whom required a second invitation and five required a third invitation before attending). Three patients were unable to attend for preadmission clerking owing to social reason and were clerked in by an SHO on the day of surgery.

In all, 57 patients (11%) failed to attend for clerking, 11 of whom were withdrawn from the waiting list either because the operations were no longer indicated or because they had moved away from the area. There were 17 patients who were unable to attend owing to

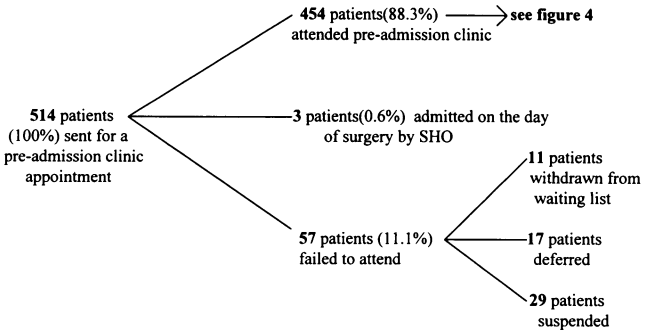

Figure 2. Breakdown of 514 adult patients invited to attend nurse-led preadmission clinic.

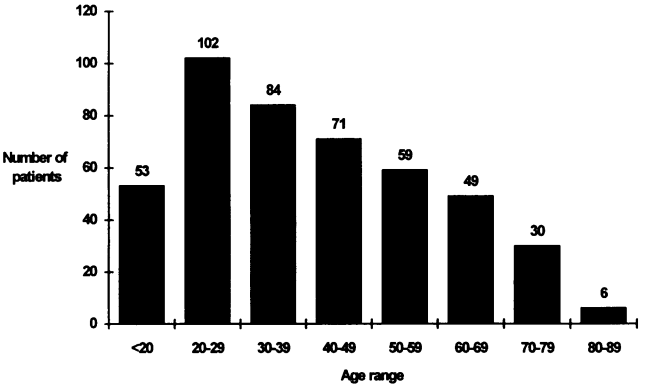

Figure 3. Age distribution of 454 patients attending preadmission clinic.

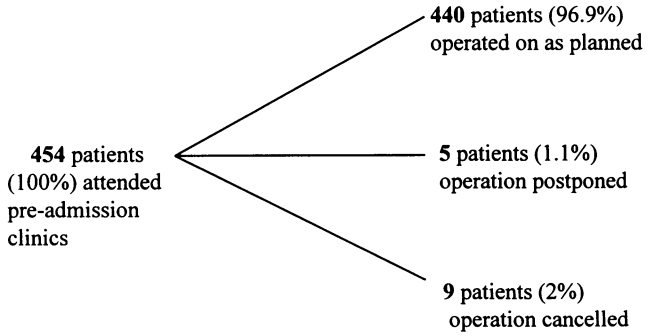

Figure 4. Outcome of the 454 patients attending preadmission clinic.

social and domestic reasons or pregnancy, and they remained on the waiting list for new dates to be given. The remaining 29 patients failed to attend for unidentified reasons, even after two or more letters of admission were sent. Their general practitioners (GPs) were informed and they remained suspended from the awaiting list pending further information from the GPs.

The age distribution of the 454 patients who attended for preadmission clerking is summarised in Fig. 3. The age ranged from 15 to 86 years (median age 38 years). There were 369 patients (81.3%) below the age of 60 years.

The outcomes of these 454 patients are summarised in Fig. 4. A total of 440 patients (96.9%) had their operations without any complication. Five patients (1.1%) had

Table I. Types of operations performed

	Main procedure	*Additional procedure*
Nasal septal surgery	97	2
Sinus surgery	42	12
Turbinate surgery	4	43
Nasal plastic surgery	21	0
Other nasal surgery	7	5
Minor ear surgery	11	0
Myringoplasty	17	0
Mastoid surgery	31	0
Tonsillectomy	111	0
Endoscopy	64	1
Minor head and neck	7	2
Major head and neck	29	0
Other	4	0
Total	445	65

their operations postponed. Of these, three were postponed at the time of preadmission, one owing to hypertension, one owing to the presence of tonsillitis and one was still convalescent after recent major abdominal surgery. Two patients were cancelled on the day of surgery, one was a known epileptic who had an epileptic fit on the day of admission, and the other because of hypertension, whose blood pressure was recorded to be normal at the time of preadmission. The types of operation performed on the 445 patients who underwent surgery are summarised in Table I. Nine patients (2%) had their operation cancelled, four during the preadmission clinics because of resolution of symptoms and operations were no longer indicated. Five patients were cancelled on the day of surgery, one because of severe claustrophobia and the other four were cancelled by surgeons who felt that the operations were no longer indicated.

Anaesthetists were contacted by nurses from the preadmission clinic on seven occasions. Advice was given over the telephone on five occasions, and two of the patients were formally assessed by an anaesthetist in the preadmission clinic.

Of the 454 sets of notes, 340 (75%) were available for retrospective review. The positive responses to various questions related to the health of the patients are summarised in Table II. A surprisingly high proportion of patients had previously had a general anaesthetic.

Out of the 340 patients whose notes were reviewed, 26

Table II. Number of positive responses to various questions (total number of patients = 340)

Heart disease or high blood pressure	51 (15%)
Asthma	55 (16.2%)
Diabetes	11 (3.2%)
Arthritis	47 (13.8%)
Heartburn/indigestion	59 (17.4%)
Jaundice	27 (7.9%)
Smoking	98 (28.8%)
Previous general anaesthetic	241 (70.9%)

Table III. Investigations requested on 314 patients

Investigation	*Total number requested*	*Number not indicated (wastage)*
Full blood count	121	31
ESR	33	33
INR	5	1
Group and save	34	25
Cross-matched	9	4
Sickle cell screen	9	0
Urea and electrolytes	90	25
Chest radiographs	38	1
ECG	41	1

patients had their investigations arranged in outpatient clinic by a doctor. These 26 patients represented those who required urgent admission. The other 314 sets of notes were closely scrutinised for the number and type of investigations requested by nurses. Overall, 45 patients were considered to have been overinvestigated and 17 underinvestigated. The large majority of those patients who were considered to have been underinvestigated were those who gave a history of adult jaundice with no clear history of gallbladder or liver diseases, and ought to have been screened for hepatitis B. A small number of patients who complained of excessive bruising ought to have had a clotting screen.

The total number of requests for each investigation and the number of wastages are summarised in Table III.

On studying the 340 sets of anaesthetic records we were unable to identify any problems related to having a general anaesthetic.

Discussion

The use of a nurse-led preadmission clinic has proved to be a very successful exercise with 96.9% of attenders undergoing surgery without any complication. Most of the patients who had their operation cancelled or postponed were correctly identified by the nurses as being unsuitable for surgery. Clerking using a proforma made it easy for the medical staff to check through all the relevant history at a glance. All the observations were clearly recorded on the proforma which was kept to the highest standard by the nurses.

Close collaboration between the nursing and the medical staff is important in the running of a nurse-led preadmission clinic. Regular review of the system allows for any weakness to be identified so that changes can be implemented. In order to improve the quality of clerking, a newly designed proforma is currently being used and the outcome is being closely audited.

According to our theatre data, a total of 546 adult patients underwent non-day-case surgery during the period of the study. As 445 of these were clerked in by the nurses in the preadmission clinic, the other 101 were

presumed to have been clerked by the SHOs. The implementation of a nurse-led preadmission clinic had therefore reduced the routine ward-based workload of the SHOs by an estimated 80%, thereby giving them more time for training in outpatient clinics and theatre.

It is clear from our study that the nurses have a tendency to overinvestigate patients and this may have important financial implication. We are currently drawing up more strict guidelines to help reduce the number of investigations.

The work of a nurse-led preadmission clinic is carried out by the more senior nursing staff (around grade F) and it is extra to their normal duty and ward commitments. However, it should be possible to fund this out of the savings from reduction of SHO's working hours.

We would like to thank Sister Cathy Murphy, Staff nurses Jane Williams and Debbie Brown, and Practice Development Coordinator Maggie Woods for their dedication and effort in the setting up and running of the preadmission clinic.

References

1 The Royal College of Surgeons of England. *Guidelines for the Management of Surgical Waiting Lists*. June 1991.

2 Thompson PJ. Reducing failure rates for in-patient oral surgery: the use of a pre-admission clinic. *Br Dent J* 1991; **170**: 59–60.

3 Livingstone JI, Harvey M, Kitchin N, Shah N, Wastell C. Role of pre-admission clinics in a general surgical unit: a 6 month audit. *Ann R Coll Surg Engl* 1993; **75**: 211–12.

4 Robin PE. Preadmission clinics (letter). *Br Med J* 1991; **302**: 532.

5 Billings PJ, Davies JP, Richards R, Aubrey DA. An audit of the preoperative investigation of surgical patients. *Ann R Coll Surg Engl* 1993; **75**: 205–10.

6 Ministerial Group on Junior Doctors' Hours. *Heads of Agreement*. DHSS, December 1990.

7 The Royal College of Surgeons of England. *Guidelines for Day Case Surgery* (Revised Edition). March 1992.

Received 1 May 1995